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ABSTRACT

The major purpose of this study was two-fold: to determine the level of achievement in selected library skills for freshmen at Central Washington State College (CWSC), and to determine which library skills, as delimited within a test, were possessed by those freshmen and which skills needed to be taught. This study was designed to test the following primary hypothesis. Freshmen entering CWSC in the fall quarter 1971/1972 who were (1) graduates of Washington state secondary schools in the spring of 1971; and who were (2) enrolled in English 101 course, did not possess the selected library skills at the fiftieth percentile or better as measured by the test, "A library orientation test for college freshmen," by Ethel M. Feagley et al. A subordinate null hypothesis, posed for the purpose of validating the result of the Feagley test, stated that the observed grouping of percentile scores of the test population would not vary from the expected grouping of percentile scores on the Feagley test. The test revealed that the entering freshmen possessed a selected list of library skills at the 47th percentile, so the hypothesis was upheld. (Author/SJ)

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A MEASURE OF THE LIBRARY SKILLS OF HIGH SCHOOL GRADUATES OF WASHINGTON STATE AS DEMONSTRATED BY FRESHMEN OF CENTRAL WASHINGTON STATE COLLEGE

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A Thesis

Presented to

the Faculty of the Graduate School

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Education

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by

Malcolm D. Alexander

December 13, 1972

LI 004 449

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A Measure of the Library Skills of High School Graduates of Washington State As Demonstrated by Freshmen of Central Washington State College

by

Malcolm D. Alexander

December, 1972.

This paper presents the study of library skills possessed by the 1971 entering freshman class at Central Washington State College. The study was designed to provide data to library faculty about the skills in which the students required instruction.

The students tested possessed a selected list of library skills at the 47th percentile as measured by Ethel M. Feagley's test A Library Orientation Test For College Freshmen. The hypothesis that they would not possess the skills at the 50th percentile was upheld.

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TABLE OF CONTENTS

Page

LIST OF TABLES vii

Chapter

I. FOCUS OF THE STUDY 1

THE PROBLEM 1

Hypothesis 2

Importance of the Study 2

LIMITATIONS OF THE STUDY 3

DEFINITION OF TERMS 4

ORGANIZATION OF THE STUDY 9

II. RELATED LITERATURE 10

STUDIES OF LIBRARY SKILLS BY GRADE LEVEL 11

Studies of Elementary and Junior High Schools 11

Studies of Library Skills in Washington State Schools 16

The Joyce Study of College Seniors 19

Other College Studies 21

LIBRARY SKILLS FOUND IN THE LITERATURE 30

Chapter Page

Comparison of Recommended High School Skills and the Feagley Test 31

College Skills 41

SUMMARY OF LIBRARY SKILLS IN THE LITERATURE 44

III. PROCEDURES 46

POPULATION 47

THE TEST INSTRUMENT 48

THE VALIDITY CHECK 53

ADMINISTRATION OF THE TEST 54

IV. THE FINDINGS AND IMPLICATIONS 59

FINDINGS 59

TEST ITEM ANALYSIS 61

V. CONCLUSIONS AND RECOMMENDATIONS 68

SUMMARY 68

CONCLUSIONS 71

RECOMMENDATIONS 71

SELECTED BIBLIOGRAPHY 74

APPENDIX A 85

APPENDIX B 98

APPENDIX C 106

LIST OF TABLES

Table		Page
I.	The High Schools Represented in the Test Population . . .	49
II.	One-Sample Chi-Square Test For Goodness Of Fit For Expected and Observed Frequencies of Error For the Test Population	55
III.	Frequency Of Errors For Each Question	62
IV.	Mean Frequencies Of Error and Of Correct Responses For the Test Population by Each Of the Nine Test Parts	65

CHAPTER I

FOCUS OF THE STUDY

The College librarians had contended that freshmen entering Central Washington State College had poor preparation in library skills. No study had been attempted to verify this supposition. This researcher needed verification of this supposition because he was responsible for the planning of library orientation and instruction.

An opportunity arose to test this contention and to provide information to the researcher and to the faculty who were carrying on freshmen library orientation. This study focused upon the acquisition of data regarding library skill levels for freshmen students at Central Washington State College. The reason for acquiring the data was to make it available to the college librarians and faculty for use in planning library orientation and instruction.

I. THE PROBLEM

The major purpose of the study was two-fold: (1) to determine the level of achievement in selected library skills for freshmen in English 101 classes at Central Washington State College, hereafter

CWSC; and (2) to determine which library skills, as delimited within a test were possessed by these freshmen and which skills needed to be taught.

Hypothesis

This study was designed to test the following primary hypothesis. Freshmen entering CWSC in the fall quarter 1971/1972 who were (1) graduates of Washington State secondary schools in the spring of 1971; and who were (2) enrolled in English 101 course, did not possess the selected library skills at the fiftieth percentile or better as measured by the test, A library orientation test for college freshmen, by Ethel M. Feagley et al.

A subordinate null hypothesis, posed for the purpose of validating the result of the Feagley test, stated that the observed grouping of percentile scores of the test population would not vary from the expected grouping of percentile scores on the Feagley test.

Importance of the Study

The reference librarians at the CWSC Library had been asked yearly to orient college freshmen and other students to the college library for at least seven years prior to this study.

The students requesting help with basic skills were a mixture from all class levels including graduate students. Those students continued to request an inordinate amount of individual help from the

librarians during this study. The librarians were not able to provide other necessary service because of this demand on their time.

The general contention of the librarians was that there was a lack of knowledge of the techniques of attack and utilization of library resources on the part of high school students and college freshmen. Basic library skills should be a part of the knowledge possessed by each entering freshman. This study was expected to provide data regarding strengths and weaknesses in the library skills of entering freshmen. The basic skills should be given to the freshmen immediately upon their arrival, if the freshmen did not already possess them.

There seems to be a general consensus of the librarians that without those basic skills, the individual student could not function to the optimum in the course work assigned at Central. He could not independently locate or use most of the basic dictionaries, encyclopedias, handbooks, indexes, abstracts, bibliographies and other scholarly tools that were housed in the CWSC Library. These skills were specified as those considered absolutely essential to the activity of undergraduate research. They constitute the skills delineated for study within this research.

II. LIMITATIONS OF THE STUDY

This study was limited to seventy-seven entering freshmen at CWSC in the Fall quarter of 1971. They had graduated from high

schools in Washington State the preceding spring and were enrolled in one of seven sections of English 101. The section instructors were teaching assistants under the supervision of Dr. John Vifian of the English Department. The depth of involvement in library skill building depended upon each instructor and his commitment to the principle of library orientation.

The teaching assistants were graduate students and were scheduled to bring their classes to the library for orientation after the administration of the Feagley test. The library staff, Dr. Vifian, and the teaching assistants cooperated in this instructional effort.

The library skills within this study were limited to those of the Feagley test (Feagley, 1955). The review of the literature was restricted to the decade 1961-1971, and to high school and college studies. Four exceptions were made when they were identified in the literature and they are noted at the beginning of Chapter II.

III. DEFINITION OF TERMS

The following definitions were used within the context of this study.

Base population. The 1,120 freshmen who were enrolled in English 101 at CWSC Fall quarter 1971-1972, who had earned no college credit prior to the fall of 1971 and who were enrolled in a high school in Washington in the fall of 1970. They were graduates from

Washington high schools in the spring of 1971 as determined by the CWSC Director of Admissions and the CWSC admissions policy.

Basic library procedures. The library skills and techniques which a student must have in order to use a library for research or personal needs, and to answer questions or solve problems requiring the use of information obtainable from print and non-print materials found in the library collection of the CWSC Library.

Basic library tools. The indexes, encyclopedias, dictionaries, handbooks, and other reference sources most frequently mentioned in the literature as essential library reference tools. They include Encyclopedia Americana, Encyclopaedia Britannica, The World Almanac, Bartlett's Familiar Quotations, The Reader's Guide to Periodical Literature, Granger's Index to Poetry, the Marquis Who's Who In America series and similar or related publications in many disciplines. These books have been listed by numerous authors one of the most noted being Cheney (1971).

English 101. The generic name for a group of classes in English Composition that are listed in the CWSC 1971-1972 Undergraduate Catalog under the English 1010 course number. It was required of all students except those exempted on the basis of a standard score of sixty-two and above on the Washington Pre-College English placement test (Washington State, 1971).

Fall quarter 1971. The period of formal academic activity from September 29, 1971 to December 17, 1971 in which classes met regularly on CWSC campus.

Feagley test. A test of library skills entitled A Library Orientation Test for College Freshmen. It was prepared by Ethel M. Feagley, Dorothy W. Curtiss, Mary V. Gaver, and Esther Greene, and it was copyrighted by Teachers College Press of Columbia University in 1955. The manual was copyrighted in 1961.

Hard research. A rigorous, stringent study; a sharp, probing investigation; study resulting in unchangeable, "hard facts" (American Heritage, 1969).

Independent library research. Library research done by an individual without the assistance of a reference librarian or professor.

Knowledge. The fact or condition of knowing something with familiarity gained through experience or association; the range of one's information or understanding; the sum of what is known; the body of information and principles acquired by mankind (Webster's, 1963).

Library instruction. The step by step instruction in the use of encyclopedias, dictionaries, indexes, and other basic library tools and procedures.

Library orientation. The physical and intellectual orientation to the location of the library collections and resources.

Library research. Research done in the literature available in libraries in print and non-print format. The reading, writing, and study done in material prepared by other scholars. This may include the reporting of findings, summarization, and verification of information through bibliographic citations.

Library Science 145. A course offered at CWSC emphasizing skill in the use of general reference books, the card catalog, indexes, and library research processes. It includes familiarization with library materials useful in college courses.

Library skills. The ability to use knowledge of the library effectively and readily in the execution or performance of technical activities such as the use of books, the location and use of periodical indexes, and the use of the vertical file. The knowledge and ability to record citations for information found in library research, and to use those citations as verification of information in compiling a formal written report.

Non-print materials. Those disc recordings, tape or video-tape recordings, 8, 16, and 35mm films and microfilms, slides, film strips, photographs, photographic prints and other informational

materials which do not require reading of the written language in order to extract the informational material from them.

Print materials. Those books, magazines, pamphlets, government documents and other informational materials printed mechanically or photographically on paper or other carriers such as film.

Test population. The seventy-seven freshmen enrolled in one of the seven randomly selected test sections of English 101. They were selected for administration of the Feagley test upon the criteria that they were members of the base population.

Washington Pre-College English Test. A test series used to assist high school graduates plan their future educational programs. "High scores on the vocabulary and reading [sub] tests suggest strong potential for academic work" (Washington pre-college, 1969-1970, p. 6). The English composite score is "a weighted average of the English usage, spelling, and vocabulary subtests; the spelling test is weighted one-half of that of each of the other two subtests."

"The mean of the norming group was fifty and the standard deviation ten. The norming group was the group of high school juniors who participated in the program in the spring of 1968" (Washington pre-college, 1969-1970, p. 2). The test score is used by the CWSC

testing center to determine placement of individuals in the English 101 course.

IV. ORGANIZATION OF THE STUDY

Chapter II presents the literature related to library skills of college undergraduate students in general and of college freshmen in particular. It presents the literature related to library skills of senior high school students. Also, it presents studies which have significant and applicable findings relevant to this study.

Chapter III presents the procedures used in this study including those relative to the selection and characteristics of the population, the validity, and the make up of the test instrument, and the administration of the test. Chapter III, Table I, lists the source high schools from which the test population was drawn.

Chapter IV focuses upon the findings of the study and their implications. Attention is given to the enumeration and item analysis of the skills possessed by the population as measured by the test instrument. Attention is also given to the implications for library instruction at CWSC.

Chapter V is a summary of the study and the recommendations.

CHAPTER II

RELATED LITERATURE

The literature was approached with two goals in mind. The first was to make a survey of studies which measured the ability of students to use library collections for independent library research. The search of the literature was designed to locate data in which the range of library skill was demonstrated by the ability of students to utilize library collections.

The second goal was to make a survey of the library skills needed by college freshmen as a prerequisite to independent library research. The purpose of this survey was to determine by comparison how closely the selected skills of the Feagley test coincide with the skills generally assumed critical by the school and academic library profession.

The survey of the literature was limited to the decade 1961-1971 and to studies of high school and college populations. Four exceptions were made. The Sanford study (Sanford, 1967), the Wilkinson study (Wilkinson, 1956), the Gaver bibliographic essay (Gaver, 1962) and the Conlon skill text (Conlon, 1964). All four dealt with the elementary or junior high school levels. The Wilkinson study

and much of the content of the Gaver article were from the period prior to the 1961-1971 decade.

I. STUDIES OF LIBRARY SKILLS BY GRADE LEVEL

Library skills were presented in the textbooks and curriculum guides that were examined for this survey in developmental steps. Those steps increased in complexity as the grade level for which they were prepared advanced from elementary through secondary and into college. As a means of organizing and introducing the library skills represented in the literature, the studies from which those skills were extracted for this survey were organized by grade level.

Two particularly pertinent studies were identified for special consideration. The first, by Joyce (1961), identified a list of library skills and indicated that there is a correlation between academic achievement and performance on a test of library understandings. The second, by the office of the Washington State Superintendent of Public Instruction (Washington, 1964), provided statistics stating which Washington State schools taught a specified set of library skills.

Studies of Elementary and Junior High Schools

Sanford (1967) states possible answers to the questions raised by his investigation will depend in part on valid and reliable estimates of library skills. Sanford's study asked the question whether a centralized library system with a trained librarian has more impact on

a total instructional program in an elementary school than a small collection of books placed in each classroom with a teacher serving in the role of librarian. He found a measurable increase in the library skills of some groups when a centralized library with a trained librarian was available to the group. Sanford recommended study of the relationship between library skills and academic achievement.

His study was concerned with the practices of the Tacoma School District in the use of libraries and librarians at the elementary school level. His study provided in part a basis for answering such questions by means of a test which measured skills. He was able to standardize a Library Skills Test by Mary V. Gaver of Rutger's University for the Tacoma School District and found it well adapted for assessing library skills for grades six through nine (Sanford, 1967).

As early as the study by Gardiner and Baisden (1941) a new development in the elementary school approach to teaching library research skills was becoming evident. Teachers were encouraged to lead children to ferret out their own answers to questions (Sanford, 1967, p. 7). This growth in independent student use of libraries implied a need for greater knowledge of library skills on the part of each student and teacher.

Gardiner and Baisden also emphasized the need for instruction in the use of library material. Calhoun (1961) stated that it became easier for students to consider the use of the total resources available

in a centralized library (as opposed to a scattering of classroom collections) and that such a library could offer, under competent instructors, an effective program for the development of library skills (Sanford, 1967).

Wilkinson (1956) found that there was significant growth in the work-study skills of fourth grade students when they were given organized and centralized library facilities and instruction. He stated, "This implies that the method of teaching the work-study skills by the librarian in the library was effective." Wilkinson was reluctant to report conclusions regarding who should teach specific skills and whether they should be taught in the library or in the classroom because previous reviewers had reported that the discrimination in subtests of the Iowa work-study skills test had low reliabilities (Wilkinson, 1956, p. 51).

The Iowa work-study skills test is a subtest of the Iowa Tests of Basic Skills. The Iowa Tests of Basic Skills was designed to measure vocabulary, reading comprehension, language, work-study, and arithmetic skills in grade three through grade nine.

The work-study skills test was ". . . designed to evaluate the child's ability to use graphic materials, reference materials, tables, and maps. . . . The test on reference materials is adequate but not as distinctive as the other two tests in this area" (Herrick, 1959, p. 33).

Gaver, (1962, p. 121) reported:

> One of the key questions asked by school administrators, especially in relation to plans for the establishment of libraries in elementary schools, is, 'What difference does it make to children?' The studies which have been aimed directly at investigation of the relation of the library to such factors as the development of library skills, the amount and quality of pupil reading, and pupil achievement indicate that the provision of a 'real library' with at least one full time librarian does have a measurable positive relationship to these factors. This relationship, however, is very difficult to measure exactly because there are so many interrelated factors (Gaver, 1962, p. 121).

Gaver continued:

> Generalizations with regard to pupil outcomes which seem justified by research completed to date include the following: children who have continuing access to good school library collections administered by qualified library personnel generally read two to three times as many items in a greater variety of literary forms and interest areas, read more magazines more frequently, and also include fewer nonreaders than do children who have had access only to classroom collections or centralized collections with no professional personnel (Gaver, 1962, p. 121).

Other studies also corroborated this statement James (1952), Janacek (1949), Vickers (1951), Monahan (1956), Masterton (1953), Hagrasy (1961), Leavitt (1954), Thorne (1967).

> They also appear to make higher scores on reading tests (Masterton, 1953; Harmer, 1959) and show greater educational gain between fourth and sixth grades as measured by the Iowa test of basic skills (Gaver, 1960; Gaver, 1963) or as indicated by the professional judgment of their teachers (Gaver, 1962, p. 121).

Thorne, (1967) found that eighth and ninth grade pupils with augmented library services under a Knapp Project grant, Farrar Junior High, Provo, Utah, made significant gains in the growth of reading comprehension and acquisition of knowledge of library skills

(Thorne, 1967, p. 56). The augmented library service included library instruction. Hale (1969) also found significant measurable educational achievement as a result of effective library services administered by a qualified librarian. Her study was conducted at Crestwood Senior High, Chesapeake, Virginia using twelfth graders.

Gaver stated:

> Furthermore, children who have had systematic instruction in library skills closely related to the curriculum and the opportunity to use an organized library collection consistently and continuously score higher on work-study tests and/or on tests of library skills than do children lacking this opportunity (Harmer, 1959; Gaver, 1963; Conlon, n.d.) (Gaver, 1962, p. 121).

"In spite of the fact that the library studies cited here have not been carried out on a large population. . ." comparable in size to those used in the school studies of Bothwell (1958) and Landerholm (1960) ". . . the findings reported indicated [to Gaver] that the provision of an elementary school library . . ." [and the instruction which it provides in library skills] ". . . does have a positive relation to student outcomes and by inference to quality education" (Gaver, 1962, p. 122).

These studies appear to substantiate the contention of the librarians at CWSC as reported in Chapter I, page 1, of this study.

"Two important factors in the learning process were how to think and how to study" (Conlon, 1964, p. ix). To guide the student in the development of these two factors was the purpose of the (Conlon's) skill text and a part of many programs of library instruction.

> The long range objective of Conlon's skill text [and many librarians who were conducting library instruction programs] was to develop specific skills required in reference work such as: a workable understanding of the parts of a book; knowledge of the purposes of reading; a firm foundation in the reading-study skills; an ability to follow written directions and to express ideas in complete sentences. If these objectives are achieved, the average student, in relation to his potential, should be able to perform the following tasks on the completion of the [Conlon's] skill text: to analyze questions; to select material as a possible reference source; to locate this reference source; to determine the authority of the author; to recognize and establish the relative age of the reference information; to judge the thoroughness with which various topics have been developed; to extract, organize, and record the facts (Conlon, 1964, p. ix).

"These library and study skills will require constant supervision on the part of the . . ." instructor (Conlon, 1964, p. ix).

> If the pupils to be taught are junior high school students, (or college freshmen) the same procedure should be followed as outlined for the elementary student. (1) Their readiness should be checked by means of diagnostic tests . . .; (2) library instruction should be given at the level of the students' needs; (3) practice and application should be provided; (4) new concepts should not be presented until the previous learning skills have been mastered (Conlon, 1964, p. xxi).

It was the purpose of this study to determine what skills needed to be taught to freshmen at CWSC. The above studies tend to corroborate the need for instruction in library skills and the positive benefits of such instructions.

Studies of Library Skills in Washington State Schools

A review of available resources revealed that there were no studies in the four year colleges of Washington State which measure college undergraduate library skills. The 1964 School Library and

Audio-Visual Survey gathered statistics on library skills in Washington schools for grades K-12 (Washington, 1964).

One thousand three hundred forty-nine school buildings in Washington State replied to the questionnaire (Washington State, 1964, p. 8). The number of responses reported varied from question to question.

> . . . reading guidance and library instruction were indicated as regular services provided by most librarians, but in too many instances the library instruction, except on an individual basis, went no further than an orientation period (Washington, 1964, p. 129).

One hundred ninety-eight senior high school librarians of 243 responding reported regular provision of individual guidance in book selection, 42 reported occasional assistance, and one rare assistance. Of 243 responses, 215 senior high school librarians reported regularly assisting individual students in developing skills in use of books and libraries, and 28 reported occasional assistance. One hundred fifty-nine senior high librarians of 232 responding reported regular assistance in developing skills in the use of books and libraries for student groups, and 214 senior high school librarians of 242 responding reported regular assistance with individual and group research projects. Twenty-seven occasionally assisted and one rarely assisted with individual and group research projects (Washington State, 1964, p. 69).

> Although 89% of the librarians of the 1,223 (elementary, junior high and senior high) librarians replying indicated that library orientation was given to new students at the beginning of the school year, only 77% showed a planned program of library

> instruction offered beyond the orientation period. . . . 49% had a manual for library instruction. This instruction was given by the librarian only in 347 schools; by the teacher only in 68 schools; by the librarian and teacher jointly in 491 schools (Washington State, 1964, p. 63).

Library orientation was given to new students at the beginning of the school year by 728 (87 percent) of 836 responding elementary schools, 145 (100 percent) of the 145 responding junior high schools, and 216 (89 percent) of the 242 senior high schools reporting. Planned programs of library instruction beyond the orientation period were a part of the curriculum in 628 (77 percent) of 811 elementary schools, 125 (87 percent) of 143 junior high schools and 151 (67 percent) of 230 high schools responding. Four hundred and one (50 percent) of 810 elementary libraries, 71 (50 percent) of 142 junior high libraries, and 113 (47 percent) of 242 high school libraries had their own curriculum guide or manual for library instruction (Washington State, 1964, p. 63).

The data from this study did not indicate actual instruction beyond an orientation period but only the reported existence of planned programs of instruction. The study did indicate a widespread concern with instruction in library skills in Washington state schools. One thousand eighty-nine school buildings provided an orientation period for new students, 904 had planned programs of library instruction and 585 had manuals for library instruction.

The Washington State survey recommended ". . . increased emphasis should be placed on the developing library skills, with teachers and librarians preparing together a sequential program of

library instruction from grades K-12" (Washington State, 1964, p. 131). "But in too many instances the [survey found] library instruction, except on an individual basis went no further than an orientation period" (Washington State, 1964, p. 129).

The Joyce Study of College Seniors

Joyce (1961) observed that undergraduates in the State Teachers College, Lowell, Massachusetts, did not have the prerequisite understandings to approach and use a library. He administered the Feagley test to sixty-four seniors graduating in elementary education from the College in 1957. They were part of a group of eighty-one education students who had a homogeneous college background comprised of similar classroom and library experience during their four years at college.

The test indicated that the sixty-four students were unable to utilize the basic library tools and procedures and therefore would be unable to teach library skills in the schools to which they would go following their graduation (Joyce, 1961, p. 198).

> It was felt [by Joyce] that such an examination (Feagley's test) would reveal weaknesses [and strengths] of the program in library instruction, most of which took place in the freshman year. The results were reported to the administration and faculty, and the testing program was extended to the next entering class. The deficiencies in learning revealed in the original test resulted in the introduction of library experience units into the junior class program (Joyce, 1961, p. 198).

Findings of the Joyce study indicated the need for more library instruction. The outcome of the study led the present researcher

to make two assumptions. First was that lack of library skills was a self perpetuating cycle that needed to be broken. Teachers without library skills whether graduates of State Teachers College at Lowell, Massachusetts or CWSC at Ellensburg, Washington, could not teach library skills. Second, without being taught library skills at some point in their education, children and future teachers would never acquire library skills and the cycle would continue to be perpetuated. These assumptions were supported by Perkins (1965, p. 194-195). He concluded that the lack of library skills in teachers causes a lack of library use among their students which becomes a self perpetuating cycle.

The Joyce study was originally designed to measure library skills for the purpose of providing information upon which the structure of instruction in library skills could be based. During the progress of the Joyce study, however, other questions were raised. One was:

> Does a relationship exist between the scores made by students on the [Feagley] library test and th academic achievement as measured by their rank standings at the end of their four years in college? (Joyce, 1961, p. 198).

Joyce expanded and altered his study to examine this question. His finding was that there was a correlation between student success on the Feagley examination and their four year rank standings in the College. The assumption made by this researcher as a result of Joyce's report was that either good students know how to use the library, or

learning to use the library stimulated academic excellence. In either case there was a correlation between library use and academic superiority. Thorne (1967) recommended that:

> . . . further research be done: (1) in relation to school library services and academic achievement of pupils; (2) on the attitude of teachers toward augmented library services; and (3) on the development of standardized tests for measuring the knowledge of library skills of the junior high school pupils.

She also recommended the extension of instruction in the use of the library (Thorne, 1967, p. 60-61).

Other College Studies

Melum (1971, p. 229) corroborated the preceding finding of this literature review that there was little hard research reported on college level instruction in library skills. The Melum (1971) survey found none of the eighty-one college libraries which responded reported structured research on the effectiveness of library orientation and instruction programs, other than theses and dissertations. Only a few reported any testing.

Tidmarsh, a British university librarian, also corroborated the finding concerning the lack of hard research on library skills. She seemed, however, to imply that there was a quantity of writing on college library instruction.

> In the last 30 years over 200 articles have been written on the subject of giving students instruction in the use of libraries. The overall picture which emerges is that most librarians are convinced that library skills are not acquired naturally as a by-product of a student's main course of study, but that some kind of

> systematic instruction is necessary if he is to realize the potential of a large scale academic library and gain some skill in using its resources (Tidmarsh, 1968, p. 39-40).

> [In] . . . the United States . . . it is generally accepted now that instruction is desirable. . . . many universities and colleges do offer instruction, either as an independent course, which may be required and carry credit, or as a unit of the freshman English course (Tidmarsh, 1968, p. 40).

Tidmarsh concluded:

> Papers by British librarians, advocating instruction for both undergraduate and post-graduate students, began appearing 40 years ago, but at present only half a dozen university libraries seem to be tackling the subject seriously (Tidmarsh, 1968, p. 40).

Six studies of college library instruction were found to be applicable to this study. They all fell within the decade 1961-1971. Included among them were three studies of specific colleges.

First, a widely known study at Earlham College, (Kennedy, 1971), second, a study by Patricia Knapp of the Wayne State experiment at the Montieth College Library (Knapp, 1966; Paulson, 1968, p. 12), and third, a study of Southern Illinois University's individualized instruction via the media of teaching machines (McCoy, 1962; Paulson, 1968, p. 13-14). The other three were general studies by Wheeler (1964), Badger (1966), and Josey (1962).

Wheeler's study provided the following statistics. Sixty-six and nine-tenths percent of 103 community colleges responding provided instruction on library skills. A library orientation test was administered to all new full-time students in 14.5 percent of the colleges; and in 56.3 percent of the colleges, library orientation was required of all new full-time students. Eighteen and four-tenths percent of the colleges

had a library instruction course in their curriculum. "In some, it is a strong future possibility and it has been discontinued for lack of staff in others" (Wheeler, 1964, p. 36).

The statistics from Wheeler's study suggested that two-thirds of the community colleges who deal primarily with entering freshmen and lower division college students considered library instruction to be necessary. Eight library directors reporting considered their library orientations inadequate and in need of improvement (Wheeler, 1964).

Elizabeth Badger (1966) conducted a study at the request of the Executive Committee of the Junior College Librarians Section of the Association of College and Research Libraries (ACRL). One of the purposes of the study was to ascertain actual library instructional practices. She found that sixty-three of ninety librarians responding gave orientation, sixty-five gave instruction, and eighty-five presented the orientation or instruction to English classes and twenty-seven presented the instruction or orientation to psychology classes, forty-five gave the orientation or instruction at the beginning of the semester (Badger, 1966, p. 1-3).

Giving instruction at the beginning of the semester would appear to be in conflict with the ideal of relating instruction in library skills to specific problems or course work mentioned by Wheeler (1964, p. 38) and Paulson (1968, p. 6). Library instruction given only at the beginning of a semester could not be related to ongoing course work.

Badger found that thirty-one of the ninety librarians reported offering a single class period of instruction. Seven reported offering full semester "instruction programs" and seventeen gave library instruction as a course for credit. She did not clarify whether the "instruction programs" were full courses for credit or one time instruction as needed by individuals or groups.

Twenty percent of 846 students from the same colleges reported that they felt they needed more instruction in the use of the classification system. Fifteen percent of the students wanted more instruction in the use of periodical indices, 9 percent asked for more help with atlases. Thirty students or 3.5 percent indicated a need for additional help with dictionary use and 26 or 3 percent reported a need for more help with encyclopedias.

Within the context of their library instructional programs at that time, 480 of the 846 students said the most help in learning to use the library had come from previous instruction in high school. Three hundred fifty-seven students reported that the most help had come from a librarian. 243 indicated the most help had come from library orientation, and 185 reported the most help was provided by other students (Badger, 1966, p. 1-3). The totals in Badger's study were apparently not cumulative. Each total was set in relative relationship to the 846 students surveyed, but each student apparently was able to specify more than one source for the most help.

Five hundred twenty-two students or 62 percent of the sample favored library instruction given in connection with a course of English. One hundred forty-nine or 18 percent favored a separate course in the use of book and libraries. CWSC offered both alternatives through English 101 and Library Science 145.

Freshman English courses continue to be the traditional course for offering instruction in the use of libraries (Josey, 1962, p. 498). Josey found that 60 percent of 500 college and university administrators reported no formal course in the use of the library was offered at their institution, and 45 percent offered only elementary instruction in the form of a tour.

James Davis of UCLA said, "An independent evaluation committee tested students in the High Potential Program (California, 1970; Dudley, 1970) in all required courses." The High Potential Program was a library skills instructional program designed to increase the potential for academic success of Chicano students at UCLA. "Eighty percent of the [High Potential Program] students exceeded the expectant criteria level in library skills." The criteria level was not specified and was apparently unavailable in the literature. "The other students tested all fell below 35 percent" (Melum, 1971, p. 229). The "other students" appear to have been those not given the opportunity to be involved in the High Potential Program or other library instructional programs.

"Others have found that students who have had library instruction score higher on a library test than do those students who have not had any instruction." A caution is interjected into the Melum study, and into this study as well as by Melum, when she states ". . . the question remains: Are test scores a valid measure of a student's ability to search the literature for a specific purpose?" (Melum, 1971, p. 229). Further research must be done to examine this question.

The literature indicated, the primary method currently used by a majority of librarians for assessing success of library instruction was the verbal expression of appreciation from students and faculty, and the observed increase in sophisticated use of resources and procedures (Melum, 1971, p. 229).

There were three nationally advertised conferences on library instruction from June 1970 to May 1971. James Kennedy of Earlham College, Richmond, Indiana, reports that for at least sixteen years prior to that time there had been none (Kennedy, 1971, p. 277). This was offered as an indication of an upsurge in interest in library instruction, and of the need for knowledge of library skills. Kennedy said that another indication of renewed interest in library instruction was the response to another of his articles (Kennedy, 1970). In 1971 more than two hundred librarians had requested copies of the

Earlham course-related bibliographies which were reported in that article.

Earlham's instruction program has three guiding principles. The program is course-related, demonstrated and graduated. The Earlham program used course assignments for motivational purposes and gave library instruction to classes with specific library problems assigned to them. The key is immediate student use of the library information acquired.

Earlham librarians demonstrate library techniques in literature searches directly applicable to the students immediate needs, and they have a program graduated for the needs of four levels of student abilities. Each level builds upon the previous learning of the students. The levels are pre-freshman (not course-related), freshman, beginning major, and senior seminar (Kennedy, 1971, p. 280).

Kennedy quoted Patricia Knapp (Knapp, 1968) in a cautionary statement arising from her Montieth College library experiment, ". . . motivation of independent inquiry (by professors) through course assignments which call upon students to formulate their own questions and seek their own answers in the library, with minimal guidance, (and without previous library instruction) often produced not learning but confusion, frustration, and hostility" (Kennedy, 1971, p. 280).

The presumption that may be drawn from this statement, and which was implied by Kennedy, was that instruction in library skills

was beneficial in the sense of developing students who are better equipped to carry out independent inquiry.

Both the Montieth College library experiment (Knapp, 1966; Paulson, 1968) and the Southern Illinois University experiments (McCoy, 1962, Paulson, 1968) were oriented to the study of traditional versus non-traditional methods of library instruction and the development of effective methods of non-traditional library instruction. Knapp's Montieth College experiment was an exploratory research concentrating upon methods of investigating several general hypotheses. These hypotheses clustered around the central function of the academic library as a contributor to the instructional program of its parent institution. There were many test instruments prepared for the study and tested for their validity in measuring library skills with pencil and paper tests. The study provided bibliographic services for teaching faculty who were orienting their courses to heavy library use for purposes of the study.

Knapp reported:

> Our exploratory analysis of the library performance tests supported our initial contention that a complex array of knowledge and skills is involved in library competence and that this complexity would profit from more intensive analysis than it has had heretofore. The correlation between the composite scores on these tests and the Library orientation test for college freshmen indicates that use of such a standard paper-and pencil test is justified, because it is inexpensive and easy to administer, wherever a gross measure of fairly elementary library knowledge and skill is all that is required. It is not adequate as a measure of the elements in high level competence (such as the graduate level measurement

> which was done as a part of Knapp's Montieth study); it is likely to be of little use as a measure of the effectiveness of specific learning experiences designed to produce such competence (Knapp, 1966, p. 71).

As a result of this finding the item analysis in the study was oriented to broad skills represented as parts of the test and not to specific questions.

The Southern Illinois University experience (McCoy, 1962; Paulson, 1968, p. 13) identified three aspects of library orientation. They were physical orientation, motivation, and demonstration of the mechanics of library use. McCoy used teaching machines to teach the mechanics of library use to large numbers of freshman English students. They "showed no appreciable difference between groups" (McCoy, 1962; Paulson, 1968, p. 13). The real significance of the study, however, was that "both of these groups . . . performed decidedly better than a group which received no instruction" (Paulson, 1968, p. 13).

Trinkner has said, "a sound program of library instruction is the goal of library personnel. There is a definite agreement among the librarians . . ." at Pensacola Junior College, Florida ". . . that the students must know what a library is and how to use it effectively" (Trinkner, 1960, p. 378). A sound program of library instruction can not be developed by those charged with such program development without knowledge of what instruction is needed by the students. An

indication of what the 1971 freshmen at CWSC needed to know was to be gathered in this study.

II. LIBRARY SKILLS FOUND IN THE LITERATURE

The professional literature contained many lists of appropriate library skills essential to the use of college libraries. Most lists were repetitious, however, several contained innovative or unusual suggestions not found in other lists. This review is not an exhaustive report. It is a report of available lists, pertinent to high school and college library use. The present researcher chose fifteen lists as representative of the basic skills appropriate to undergraduate library research for report in this review. Occasionally the present researcher reported a single pertinent skill from a source on the basis of its apparent merit for consideration as a basic skill.

These lists were proposed in high school and college studies or in professional articles written about high school and college library skills. The lists which presented high school skills were taken from the Highline School District (Bardsley, 1964), from the Crestwood Senior High School, Chesapeake, Virginia (Hale, 1969), from the Curriculum Guide for Teaching Library Skills of the State of Oklahoma (1969), Boyd (1965), and others.

It was necessary to relate the skills recommended for high school library instruction to the skills suggested as essential for

college library use. When high school library instruction was considered in the light that it was, in part, college preparatory, the relationship and importance of high school library instruction to college library skills became apparent.

Comparison of Recommended High School Skills and the Feagley Test

The Feagley test was constructed to measure library skills of freshmen college students. The skills that it measures include the definition of vocabulary terms, the interpretation of information found on catalog cards, the choice of subject headings used in the card catalog, and the arrangement of those subject headings in the card catalog. Also, the test measures the skill of selecting reference titles in the literature and biography areas to provide requested answers to specific questions, of choosing periodical indexes to locate information, of interpreting the entries in the periodical indexes, and of defining a selection of frequently used abbreviations.

Comparison of skills in the Hale Questionnaire and in the Feagley Test. The Hale (1969, p. 10) list of skills which follows was in may respects typical of the lists examined. Those lists usually contained the following general elements of knowledge or group of skills.

Learning the purpose of a library.
Learning the necessary "citizenship" for library use.
Learning the parts of a book and their importance in library use.

Learning the classification of books and the significance of classification in the location of books on the library shelves.
Learning how to use the card catalog.
Learning to use basic reference books and other tools such as encyclopedias, dictionaries, hardbooks (books with hard covers), atlases, almanacs and indexes.
Learning of the value of the vertical file and learning how to use it.
Learning of the value of audio-visual material and learning how to use them.
Learning to make use of bibliographies.
Learning to take notes from library materials.
Learning to outline and write reports.

In the lists, skills were stated in three ways, either as knowledge to be acquired, attitudes to be assimilated or, less frequently, as behavioral objectives to be mastered as skills.

The above list was prepared for this report as a statement of learning. This technique was chosen in an effort to maintain the integrity of Hale's list. She stated, ". . . the writer designed a Library Skills Questionnaire to test students' knowledge about library skills and resources and their application for discovering knowledge in various subject areas" (Hale, 1969, p. 11). The skills which could result from the learnings in the above list may be interpolated by converting the word "learning" to behavioral terms.

Often reading skills (University College, 1970, p. 3; Bristow 1970, p. 30) and writing skills (Bardsley, 1964, p. 10; Washington State, 1964, p. 129; Boyd, 1965) were included with lists of library skills. They were essential to carrying on library research; but

because they were not exclusively characteristic of library research, they were not transmitted from the lists to this report.

Hale (1969) developed her own Library Skills Questionnaire for use in Crestwood Senior High School. It contained fifty questions. The following list of skills drawn from Hale's questionnaire also appeared in Feagley's test (see appendix A).

Recognition of the value of and understanding the use of:

A bibliography
A book index
A table of contents
A call number
A copyright date
A preface
The name of the author of the book
The name of the publisher of the book
A title page
The contents of a card in the card catalog
The ability to locate a book in the library shelves
The substantive content of a bibliographical reference
The arrangement of information in an encyclopedia
The ability to determine which type of reference book from which a given question could be answered
An understanding of vocabulary such as vertical file, entymology, periodical and copyright
An abstract
The specialized subject dictionaries and certain commonly used reference sources such as Who's Who in America, World Almanac, Granger's Index to Poetry, Firkins Index to Short Stories, The Cambridge History of English Literature, and the Reader's Guide to Periodical Literature

Items included in the Feagley test which were not in Hale's questionnaire were:

Specific vocabulary terms such as annotation, anthology, gazetteer, imprint, italic, serial, series, and joint author

The bibliographic note as found on a catalog card
The pagination as found on a catalog card
The subject headings in the card catalog
The arrangement of subject cards in the card catalog
The elements of an entry in a periodical index
Exercising a choice over which periodical index to use for a purpose
Abbreviations such as ca., e.g., et al., ibid., op. cit., sic, v.

The Feagley test assumes an understanding of the Dewey Decimal Classification. Familiarity with Dewey was suggested as a basic library skill in the studies by Hale (1969, p. 30), Ostwald (1964, p. 13), Ehrhardt (1969, p. 379), Axeen (1967, p. 28) and in the study by the Oklahoma State Department of Education (Oklahoma, 1969, p. 5). The study by Boyd (1962, p. 13), and the study at the University of California-Los Angeles (California, 1970, p. 5) recommended that an understanding of the Library of Congress Classification was important for appropriate libraries. UCLA teaches the use of the Library of Congress Classification as a part of the Chicano High Potential Program instruction.

The Feagley test did not include the Library of Congress Classification because the test was designed for populations using the Dewey Decimal Classification. The ability to use classification represents a small portion of the total skills examined by the test. Question number thirteen was the only one which considered classification. The position of the classification number on the catalog card and its use in locating a book in the library was the substance of the

question. The literature did not reveal any concern for the almost total lack of measurement of the ability to use classifications which was present in the Feagley test.

Items included in Hale's questionnaire which are not a part of the Feagley test were:

The purpose of the classification number
The substantive content of an almanac
The classification numbers found in the vertical file for specific subjects
The types of material found in the vertical file.

The specific titles of frequently used reference works which appeared in these lists varied with each study. The selection for inclusion appeared to depend upon preferences and use patterns developed by the librarians, and upon the titles which the specific library owned.

Hale's questionnaire (Hale, 1969) required knowledge of the following titles as demonstrated by recognition of the potential use of each. In this citation each was given in the form used by Hale and may not be bibliographically correct.

Who's Who in America
World Almanac
Junior Book of Authors
World Book Encyclopedia
Compton's Pictured Encyclopedia
Twentieth Century Authors (listed as Twenty Century)
Book Review Digest
Short Story Index
Reader's Guide (to Periodical Literature)
New International Yearbook
Stateman's Year-Book
Harper's Encyclopedia of U. S. History

Dictionary of American Biography
Lippincott's Biographical Dictionary
Current Biography
Baker's Guide to Best Fiction
Brewer's Readers Handbook
Firkin's Index to Short Stories
Granger's Index to Poetry and Recitations
Statistical Abstract of the U. S.
Cumulative Index (probably Cumulative Book Index)
Ayer's American Newspaper Annual (probably Ayer's Directory: Newspapers and Periodicals)
U. S. Congressional Directory
Crabb's-English Synonyms
Murray's-New English Dictionary
Roget's-The Source of English Words
Hoyt's-Cyclopedia of Practical Quotations
Moulton-Library of Literary Criticism
Harvard Classics
Cambridge History of English Literature
Dictionary of National Biography
Cove-Dictionary of Music and Musicians (probably Grove's Dictionary of Music and Musicians
New International Encyclopedia
Americana Yearbook (probably Encyclopedia Americana Yearbook)
Frey's-Sobriquets and Nicknames
Wheeler's-Explanatory and Pronouncing Dictionary of the Noted Names of Fiction
Dictionary of Phrase and Fable (probably Brewer's Dictionary of Phrase and Fable)
Lippincott's Gazetteer
Chamber's Book of Days
Bliss-Cyclopedia of Social Reform
Great Books of the Western World
The Encyclopedia of Philosophy
Collier's Encyclopedia
Lamb's Tales from Shakespeare

Comparison of skills in the Boyd Text and in the Feagley Test. Boyd (1965), a textbook for secondary and pre-college library instruction, included most of the general skills which were common to Feagley's test and Hale's questionnaire. It was organized into sixteen

sections. The first was a section devoted to the importance of reading skills in library research.

The second section on research skills provided several non-traditional and more sophisticated library skills. It had some on those more advanced skills in common with Burke's (1967) college level Documentation in Education. The following list presents those research skills:

Getting ideas from library materials
Organizing your ideas in a logical and workable form
Consult the librarian
Reliability check for information
Authenticity check for information
Timeliness check for information
Digesting information or writing briefs on books
Interpreting statistical data
Understanding the mechanics of footnotes

The third section of Boyd was devoted to vocabulary and abbreviations.

In the fourth section, which dealt with the card catalog, Boyd included the following more sophisticated skills.

Use of analytics cards
Use of series cards
Titles as main entries
Cross references in the card catalog
Use of numbers and dates in the card catalog

Boyd's lists (1962; 1965) were the only available lists of skills proposed for students grades 9-12 which included understanding of cross references in the card catalog and in encyclopedias. Only in test item number twenty-five did the Feagley test touch on cross references. In

that item an incorrect alternative answer was a cross reference subject heading.

Section five in Boyd (1965) introduced the relatively new tool, book catalogs. Many of the techniques of use in book catalogs are similar to those for the use of a card catalog. No students at CWSC needed this specific skill for the use of the CWSC Library. There are no book catalogs for the CWSC library collection.

Book catalogs such as the Widner Library Shelflist of Harvard University were found to be used for more sophisticated research than entering freshmen would usually be pursuing. Book catalogs were used in a number of major public libraries of Washington including those of the King County Library System, Seattle, Washington. Book catalogs were the only catalog means of approach to the collection in several libraries in that system, according to Mr. Mutschler, Librarian.

The page structure of encyclopedias, indicated as a skill by Boyd in section seven, was not included in the Feagley test. Page structure was indicated as a quartering of a page in an encyclopedia and designating the top left hand quarter as a, the bottom left as b, the top right as c, and the bottom right as d. This structuring when included in the encyclopedia index entries increased the speed and efficiency with which information was located.

Boyd's section eight, reference books, concentrated heavily upon choice and evaluation of reference books as well as upon providing

lists of books by type, e.g. atlases, gazetteers, almanacs, dictionaries, encyclopedias, handbooks, government documents, and newspapers. The Feagley test did not attempt to measure skill in the evaluation of reference tools except in item numbers forty-five and forty-nine. In forty-five the term "popularly written article" indicated a choice had to be made between a scholarly and a general biographical article, see appendix A (Feagley, 1955, p. 8). Item number forty-nine required discrimination based upon general or scholarly articles available either in the popular index, The Reader's Guide to Periodical Literature or in the more scholarly International Index, now The Social Science and Humanities Index.

Boyd (1965) and Feagley both touch upon knowledge of the purpose for trade bibliographies such as Cumulative Book Index. Both touch upon the skills involved in the use of magazine indexes, and Boyd listed more of the specialized indexes such as Art Index, Business Periodicals Index, Poole's Index to Nineteenth Century Periodicals, and the Agriculture Index. All of the above indexes were published by the H. W. Wilson Company in the same standard format and with the same basic techniques for use. The Feagley test questions based on the Wilson index the Reader's Guide to Periodical Literature were in fact a measure of the understanding of the technique for the use of all these indexes which were available at the CWSC Library.

Boyd (1965) and Feagley (1955) suggested the need for skills in the location of book reviews and Boyd in the discriminating selection of book reviews. Both suggested the need for skill in the interpretation of abbreviations and understanding of the vocabulary used in periodical citations.

Boyd had a section in her text designed to teach the use of the parts of the book. Hale also included skill in recognition and use of parts of the book. The Feagley test also contained questions relating to the parts of the book.

Comparison of skills for other K-12 sources and the Feagley Test. Several studies contributed additional skills for consideration. The following skills were found in addition to those enumerated in the studies above.

The curriculum guide from the Oklahoma State Department of Education suggested that constant review from year to year was necessary to encourage students to retain their proficiency in library skills (Oklahoma, 1969, p. 43, 45). Oklahoma was supported in this contention by other studies, texts, and professional opinions (Boyd, 1962; Toser, 1964; California, 1970; Dudley, 1970; Ostwald, 1964; Bardsley, 1964, p. 9).

The Oklahoma curriculum guide suggested three skills in addition to those included in the Feagley test. They were the use of specialized subject oriented dictionaries, knowledge of and ability to

use a broader spectrum of subject oriented reference tools, and the development of viewing and listening aptitudes necessary for the use of audio-visual materials. The Feagley test did not include any measure of audio-visual skills.

Bardsley (1964), Oklahoma (1969, p. 3), and Axeen (1967, p. 28) included the development of an appreciation of the history of books and printing as important to the full development of the library skills which they listed. Bardsley (1964, p. 9) suggested a "love of reading" also was important to the development of library skills. Boyd (1962) included instruction in what she called the "general approach or plan of attack" on a research project as a desirable skill. These skills included gaining an understanding of the research subject, preliminary reading, selecting the best sources, comparison and selection of sources, critical skill in evaluation of sources and the techniques of organizing the research material. Feagley's test did not include a measure of those skills.

College Skills

There were studies of college populations which identified and/or measured library skills at that educational level. Most college level skills listed were similar to those enumerated by studies of lower educational levels. These college level studies suggested an increased level of library skill sophistication in some cases. The study by Axeen (1967) was a comparison of computer-based instruction

and conventional lecture methods for undergraduate library instruction at the University of Illinois. She added an ability to use the shelf list and the serial records. She also recommended a knowledge of the Library of Congress Classification system as a means of developing skill in locating books in the library and in using the card catalog.

The UCLA Chicano High Potential Program study (California, 1970, p. 9; Dudley, 1970) taught the use of Library of Congress subject headings, the Espasa Spanish language encyclopedia, plot summaries, and the pamphlet collection. UCLA also taught the use and interpretation of the UCLA General Catalog and the UCLA Schedule of Classes.

This isolated instruction in the use of highly specialized resources raised the point that librarians tended to include some skills in their programs of instruction which were directed toward the solution of an orientation or use pattern peculiar to that library and to no other. In this instance, the college catalog and class schedule frequently were used in conjunction with other material found in the library. The activity was not a basic library skill, but the instruction in those skills was carried on in the library instructional program out of necessity. Skill in the use of Espasa encyclopedia is not a basic skill for most freshmen, but it was an essential skill for the Spanish speaking Chicano students.

The Knapp (1966) Montieth College Library experiment included the Oxford English Dictionary as a basic reference tool

requiring skill in its use for the proper development of certain types of library research. It was the only study which specifically mentioned that important title.

Shankman (1964) provided a list of basic skills which was structured differently from any other. It was organized into ten sections. They were:

1. Location skills, use of the card catalog, use of given standard reference works, and familiarity with sources of information

2. Evaluation skills, use of the copyright date, determining the relevance of information, choosing only relevant material, comparing information from several sources

3. Recording information, outlining and note taking

4. Using indexes

5. Using dictionaries, proficiency in the use of unabridged dictionaries, alphabetizing, word location, use of guide words, use of pronunciation

6. Use of encyclopedias, including use of cross references and the index

7. Developing basic library skills including the arrangement of books in the library, locating books in the library, knowing how to interpret and use the Dewey Decimal System, use of the card catalog, use of help available from librarians, how to access and use disc records and paintings

8. Use of audio-visual materials, maps, globes and graphs

9. Locating information, books, newspapers, magazines, pamphlets, government reports

10. Analyzing information and preparing reports, including timeliness of material, author authority, prepare a work outline, prepare a rough draft

III. SUMMARY OF LIBRARY SKILLS IN THE LITERATURE

There were as many variations of opinion on which skills were important as there were lists of library skills. Many lists overlapped in many of the skills suggested and each list had variations peculiar to the needs of that study.

The Feagley test was composed of nine parts which represent an elementary group of skills common to most lists. The greatest variation in the skill lists were in the designation of important reference titles. The vocabulary terms, information on catalog cards, subject headings in the card catalog, arrangement of entries in the card catalog, the Dewey Decimal Classification system, use of periodical indexes, and commonly used abbreviations were essentially the same in the lists and on the Feagley test.

The Feagley test was recognized in the literature as the best available test (Axeen, 1967, p. 37). It was recognized as an adequate test for the gross measurement of general and basic library knowledge, but it was recognized as inadequate for the measurement of high level, sophisticated library competence or for the measurement of specific learning (Knapp, 1966, p. 71).

Joyce (1961) found a correlation between scores on the Feagley test and the four-year academic rank standing of college seniors. Students who have had library instruction ranked higher academically and in library skills than those who had not had library instruction.

This finding was also reflected in James (1952), Janacek (1949), Vickers (1951), Monahan (1956), Masterton (1953), Hagrasy (1961), Leavitt (1954), Thorne (1967), Harmer (1959), Gaver (1962), Wilkinson (1956), and Sanford (1967). Axeen found that both computer-based and lecture method library instruction resulted in significant student gains in the knowledge of library use (Axeen, 1967, p. 42).

The appropriateness of the skills selected for inclusion in the Feagley test were well recognized in the profession as a suitable measurement of basic library skills. Freshmen entering CWSC could be evaluated in general terms for library skills which they possessed by using the Feagley test.

The profession shared a common list of library skills which the majority considered basic to the pursuit of independent undergraduate library research. That common list was found to be well represented in the Feagley test.

CHAPTER III

PROCEDURES

The concern of this study was an investigation of the library skills of selected freshmen who entered CWSC in the Fall quarter of 1971-1972. All entering freshmen were required to take English 101 except those for whom it was waived. A majority of the freshmen were in the course providing a single administrative source.

The test instrument chosen to measure the library skills of the CWSC freshmen was Ethel M. Feagley's A Library Orientation Test for College Freshmen. It was an eighty item test. Questions were of multiple choice and matching structure. It was the most up-to-date test available, it enjoyed a degree of standardization and a quality of data regarding its validity which no other test had, and all viewers and researchers who had used it in a study gave it some degree of credibility.

A check of the validity of the Feagley test in this study was made using a one sample chi-square goodness of fit test. The purpose of the check was to determine whether the data provided by the test was a valid assessment of the library skills measured by the Feagley test or whether the variation in the score from the 50 percent successful

response was caused by the accidental variables associated with the test.

The test was administered to sections of the English 101 course on October 29, 1971 and on November 1, 3, 8 and 10, 1971. It was administered to all members of each class. The criteria for selection of the test population were then used to choose the individuals to be used in the study.

The criteria for inclusion in the study included the following items. The individual had to be enrolled as a first quarter freshman student at CWSC. He had to have graduated from a high school in Washington State in the Spring of 1971, and he had to be enrolled in a section of the English 101 course at CWSC.

The test was administered to 125 students. Seventy-seven were finally selected as the test population. The base population for the test included all 1971 graduates of Washington State high schools and more specifically that base population was represented by the graduates enrolled at CWSC in the fall quarter of 1971. The later portion of the base population is described below.

I. THE POPULATION

One thousand one hundred forty-seven entering freshmen in the Fall quarter of 1971 were graduates of Washington State high schools the preceding spring. Thirty-nine of the 1,147 had English 101

waived on the basis of their standard score on the Washington Pre-College English Test. A student had to earn a standard score of sixty-two or above to have been granted the waiver. The thirty-nine students who comprised the waived group were analyzed to determine how many students from that group were nonetheless enrolled in English 101. Thirty-eight of the thirty-nine actually enrolled in CWSC for Fall quarter 1971. Eleven of the thirty-eight registered for English 101. The remaining twenty-seven of the thirty-nine were not included in the base population. The base population for this study was 1,120 entering freshmen.

One hundred twenty-five students were enrolled in the seven sections of English 101 selected as the test sections (see, administration of the test, p. 54). Seventy-seven students in those sections who met all of the above criteria for the base population were used as the test population. The selection was based upon their responses to a series of questions regarding the high school from which they graduated (see Table I), and their date of graduation.

II. THE TEST INSTRUMENT

The test A Library Orientation Test for College Freshmen by Ethel M. Feagley, Dorothy W. Curtiss, Mary V. Gaver, and Esther Greene was chosen for this study (Feagley, 1955). It was published in 1955 by the Teachers College of Columbia University.

TABLE I

THE HIGH SCHOOLS REPRESENTED
IN THE TEST POPULATION

School	Number of Students Tested
Ballard High School	1
Camus High School	1
Carroll High School, Yakima	1
Cascade High School, Everett	2
*Central Kitsap High School	1
Chelan High School	1
Columbia High School, White Salmon	2
Coulee City High School	1
Curtis High School, Tacoma	1
*Darrington High School	2
Dayton High School	1
Edmonds Senior High School	1
Ellensburg High School	3
Federal Way High School	1
*Ferndale High School	3
Fife High School	2
Forks High School	1
Franklin High School, Seattle	1
Goldendale High School	1
*Govenor John Rogers, Puyallup	1
Highland High School, Yakima	1
Inglewood High School, Bothell	1
Ingraham High School, Seattle	1
Issaquah High School	1
*Kent Ridge High School, Kent	3
Lake Roosevelt High School, Electric City	1
Langley High School	1
Leavenworth High School	1
Marysville High School	1
*Mercer Island High School	2
Nathan Hale High School, Seattle	3
Okanogan High School	1
Olympia High School	2
Pasco High School	1
*Prosser High School	1

TABLE I (Continued)

School	Number of Students Tested
Queene Anne High School, Seattle	1
Quincy High School	1
Rainier Beach High School, Seattle	1
Renton High School	1
*Roosevelt High School, Seattle	1
Shelton High School	1
Shoreline High School	1
Snohomish High School	2
Soap Lake High School	1
*St. John High School	1
St. Leo High School, Tacoma	1
Sumner High School	1
Sunnyside Senior High School	4
Thomas Jefferson High School, Federal Way	2
*Trout Lake High School	1
Tyee High School, Seattle	1
Walla Walla High School	1
Wapato Senior High School	1
Washington High School, Tacoma	1
*Wenatchee High School	1
West Seattle High School	1
Woodrow Wilson High School, Tacoma	1
*Woodway High School, Edmonds	1
Total	77

Names of towns were used only when necessary to clarify the designated school. The form of the school name was that used by the student unless the school was not clearly identified or unless the several students from the same school used variations of the name. In those exceptional cases the name of the school was verified in the Washington Education Association Directory (1971).

*The schools included in the random sample all of which indicated use of the Dewey Decimal Classification in their school library.

The 1960 norms reported in the Manual for A Library Orientation Test for College Freshmen (Feagley, 1961) were based on the results of the test administered to four thousand freshmen from fourteen colleges throughout the United States. The reported scores had a mean of 48.9 and a standard deviation of 11.3 (Feagley, 1961, p. 3).

> Neither of the two converted scales (percentile scores and standard scores) . . . [were] normalized, but the fact that mean, median, and mode of the normative frequency distribution . . . [were] not significantly different . . . [indicated to Feagley] that this distribution was approximately normal.
>
> The normative population . . . [included] freshmen entering college for the first time who had been given no formal instruction in library usage by that institution prior to the administration of the test. . . . No effort had been made to determine the amount of training that the students had obtained prior to college entrance, or the degree to which they had previously used the library. No data . . . [were] available for other college classes or for classes which . . . [had] received instruction in library use.
>
> Data available for use in obtaining a reliability coefficient for the Feagley test required that the Kuder-Richardson formula No. 21 be used. It was a method which underestimated reliability. The obtained coefficient was .86 and was based on the total normative population.
>
> . . . the standard error . . . for this test . . . [was] an average of 4.2 score points. This . . . [was] interpreted to mean that there was approximately one chance in three that a student's obtained score differs from his true score by as much as plus or minus 4.2 points. There was about one chance in twenty that it differs by as much as plus or minus 8.4 points (Feagley, 1961, p. 6).
>
> No data . . . [were] available for carrying out statistical validation studies for this test at the present time. There . . . [was] indication, however, of rational validity. The test evaluates the student on the basis of his response to problems which face him in the effective use of the library (Feagley, 1961, p. 7).

The nine parts of the Feagley test included: (1) definition of terms, nine questions, (2) interpretation of information on a catalog card, eleven questions, (3) choice of subject headings in the card catalog, nine questions, (4) arrangement of headings in the card catalog, five questions, (5) sources of literature information, six questions, (6) sources of biography, seven questions (7) choices of indexes, nine questions, (8) interpretation of information in periodical indexes, twelve questions, and (9) abbreviations, twelve questions. The eighty questions were matching and multiple choice response.

A minimum percentage of correct responses was needed as a criterion for assessing acceptable performance on the Feagley test. A study by Emma Lou Burge (1955) suggested a precedent for setting the performance criteria for this study.

Burge's study at Riverside High School, Plainesville, Ohio, found that over 50 percent of the 614 ninth to twelfth grade students tested were unable to answer 50 percent of the fifteen questions on basic library skills. Her conclusion was that over 50 percent of those students were unable to use the library with any degree of efficiency (Burge, 1955, p. 2).

A 50 percent successful response on the test was established by the researcher as the minimum for delimiting the inability to function independently in library research activities. A student who fails to correctly answer half of the nine sections of the test, or to

correctly answer half of the questions in all sections of the test will in the professional judgment of the researcher require instructions, explanation, and direct assistance from a reference librarian. To qualify as an independent undergraduate library user, the student should not need to have the basic library tools and procedures explained.

The absence of any measurement of skill in the use of the Library of Congress Classification system is a point that needed clarification in the study to determine its effect on the validity of the study. Twelve schools or one fifth of the schools represented by the test population were selected as a random sample and were inventoried as a means of determining how many of them used the Dewey Decimal Classification in their libraries. That inventory revealed 100 percent used the Dewey Decimal Classification, see Table I, page 49.

III. THE VALIDITY CHECK

A test for goodness of fit was made for the seventy-seven member sample population and the eighty item Feagley test. A signficance of .05 was found.

A one-sample chi-square test was used to determine whether the observed frequency distribution departed significantly from the expected frequency of distribution. The hypothesis for this chi-square test stated that the test population would not vary from the expected frequency of distribution of the norm group. The scores were recorded

as percentile ranks based upon the table of norms. The percentile groups were uniformly distributed in the norm group. The table of national norms established by Feagley was a part of the test manual, see Appendix B, page 98.

The positive reliability of the Feagley test for the present test population was to be established by acquiring a chi-square score for the test population which was greater than the score for the national norm group. Such a finding would indicate that the percentile score of the test population was not acquired by an accident in the test procedure or in the population.

In the formula N=77, .05 level, df=9 (10 cells were used) R: $\chi^2 \geqslant 16.9$ (Roscoe, 1969, pp. 190-195). To reject the null hypothesis, at a .05 level of significance required a χ^2 of 16.9 or more. With a sample size of seventy-seven evenly divided among 10 cells, each expected frequency was 7.7.

The 10 cells were selected by partitioning at the tenth, twentieth, thirtieth, fortieth, fiftieth, sixtieth, seventieth, eightieth and ninetieth centiles. A frequency distribution was constructed with the data grouped into ten classes. The expected and observed frequencies were recorded in Table II.

IV. ADMINISTRATION OF THE TEST

The subjects for whom the test was designed were "college freshmen preferably, or any group of undergraduate students." It was

TABLE II

ONE-SAMPLE CHI-SQUARE TEST FOR GOODNESS OF FIT FOR EXPECTED AND OBSERVED FREQUENCIES FOR THE TEST POPULATION

	0-11%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91-100%
Expected grouping of individual scores	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Observed grouping of individual scores	6	10	7	15	13	9	5	7	3	2

$$\chi^2 = \left\{ \frac{(O_i - E_i)^2}{E_i} = \frac{(1.7)^2}{7.7} + \frac{(2.3)^2}{7.7} + \frac{(.7)^2}{7.7} + \frac{(7.3)^2}{7.7} + \frac{(5.3)^2}{7.7} + \frac{(2.3)^2}{7.7} + \frac{(2.7)^2}{7.7} + \frac{(.7)^2}{7.7} + \frac{(4.7)^2}{7.7} + \frac{(5.7)^2}{7.7} \right.$$

$$\chi^2 = \left\{ (O_i - E_i)^2 = \frac{2.89}{7.7} + \frac{5.29}{7.7} + \frac{.49}{7.7} + \frac{53.29}{7.7} + \frac{28.09}{7.7} + \frac{5.29}{7.7} + \frac{7.29}{7.7} + \frac{.49}{7.7} + \frac{22.09}{7.7} + \frac{32.49}{7.7} = \frac{157.7}{7.7} = 20.48 \right.$$

designed to be administered by "a member of the college library staff or a faculty member . . . at the beginning of the freshman year, before any library instruction was given" (Feagley, 1961, p. 1). The researcher, a member of the library faculty and an instructor of Library Science 145, administered the test.

The test booklet and answer sheets were xerox copies of the original sample set. Permission to make xerox copies was given on October 24, 1971 in a phone conversation with Mrs. Halprin of the Columbia University Press. Payment for the use of the copies of the test was sent on November 18, 1972. A copy of the letter of transmittal and personal check was included in Appendix C, page 106.

The Feagley test was administered to 125 students prior to a library orientation session in the CWSC Library. The test was given to students in seven sections of English 101. They were randomly placed in the seven sections by the Fall quarter registration process. The placement was based upon their choice of sections, times for class meetings, and personal considerations and preferences. They were unable to predetermine who the instructors were for any of the seven sections. The sections were all taught by graduate teaching assistants under the supervision of Dr. Vifian, Professor of English, and they made a convenient and cohesive unit for administrative purposes.

On the answer sheet, each student gave information including his college class, the high school from which he graduated, and the

city and state in which it was located. He gave the date of high school graduation, whether the high school was public or private, whether he completed the GED for his high school diploma, the date on which he took his test, and any other high schools which he may have attended from grade nine to twelve.

The instructions given to the students indicated that the test was intended to reveal the areas in which they needed assistance in using the resources of the CWSC Library. They were told that the score would not count as a grade for any course. They were instructed to read all the directions in the test booklet and there were examples with each of the nine sections of the test to assist in the student's understanding of the construction and method of response for the questions in that sections. The students were encouraged to leave questions if they found them too difficult to answer and to go back later if they had the time.

Five students did not complete all sections of the test, however, all students had as much time as they wanted to finish the test. It was assumed that the unfinished parts were errors.

A period of from fifty to sixty minutes was sufficient to complete the test including time for reading instructions (Feagley, 1961, p. 1). The longest time that any student spent on the test was fifty-four minutes. Each student was informed of the administration date for the test prior to the day that the test was given. The test was

administered by the present researcher in the classroom where each English section met. The English instructors were not present during the test.

The final steps in the administration of the test included scoring it, computing the section average raw scores, and establishing the percentile scores for each section. A table of the number of errors for each question was given to the instructor for their class section. By comparing numbers of errors with the test booklet, the instructors could determine which skills needed instructional emphasis.

A summary of the number of errors for each question was also made available to the librarians who were offering the library orientation. The orientations immediately followed the administration of the test.

CHAPTER IV

THE FINDINGS AND IMPLICATIONS

The finding of this study supported the primary hypothesis. The subordinate null hypothesis also was upheld by the findings of the validity check. The null hypothesis was used to provide the statistical validation for the data about CWSC freshmen library skills which was essential for the verity of this study.

I. FINDINGS

The CWSC entering freshmen, graduated from Washington high schools in the spring of 1971, possessed selected library skills at the forty-seventh percentile as measured by the Feagley test. Therefore, the primary hypothesis of this study was supported by the study. The freshmen did not possess the selected library skills at the fiftieth percentile as measured by the test, A Library Orientation Test for College Freshmen, by Ethel M. Feagley, et al.

The subordinate null hypothesis, that the observed grouping of percentile scores of the test population would not vary from the expected grouping of percentile scores as established by the national norms of the Feagley test (Feagley, 1961, p. 3), was rejected. The test population

possessed the selected library skills at the forty-seventh percentile, see Table II, page 55. The subordinate null hypothesis shows that a significant measure of the library skills of the test population was achieved. The observed group percentile score of the test population was forty-seven and was lower than the expected group percentile score of fifty which was established in the national norms. The chi-square goodness of fit required a chi-square of 16.9 or greater in order to indicate that a significant measure of library skills had been made in this study. The implication of the failure of the students to achieve at the fiftieth percentile or above was that the group would not be able to carry on independent library research.

The chi-square of 20.48, calculated from the following formula,

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

was greater, than the χ^2 of 16.9 established as the national norm, and it was a significant measure of test population for goodness of fit, see Table II, page 55. The null hypothesis was rejected for this test. Therefore, the result of the Feagley test scores for this study was a reliable measure of library skills of CWSC freshmen.

In a random sampling of twelve schools represented by the test population, it was determined that all twelve of the schools used the Dewey Decimal Classification in their libraries, see Table I, page 49. By implication, it was reasonable to assume that most high schools in Washington State used the Dewey Classification in their libraries. The

use of the Dewey Decimal Classification was a logical choice of classifications to be measured in the determination of the skill of the populations in using a classification. It was unlikely that an accurate measure of skill in the use and understanding of a library classification could be gained had the unfamiliar Library of Congress Classification been used in the Feagley test.

II. TEST ITEM ANALYSIS

An analysis of test results was undertaken to identify all errors made by students, and to provide a list of skills in which the present test population needed instruction. The results of that identification were listed in Table III. A tendency toward progressively greater frequency of errors toward the end of the test was observed in Table III and Table IV.

A detailed statistical analysis of the test results question by question was discouraged by Patricia Knapp because the test was found to be ". . . not adequate as a measure of the elements in high level competence . . ." of library skills. "It is likely to be of little use as a measure of the effectiveness of specific learning experiences designed to produce such competence" (Knapp, 1966, p. 71).

As a result of Knapp's recommendation against the individual analysis of each question, this analysis was prepared following the parts of the test as established by Feagley. Each part had a question with the highest and a question with the lowest number of errors, see

TABLE III

FREQUENCY OF ERRORS FOR EACH QUESTION

Part	Question	Number of Errors
Part I Definition of terms	1	0
	2	8
	3	3
	4	24
	5	32
	6	4
	7	44
	8	3
	9	27
Part II Interpretation of Information on the Catalog Card	10	57
	11	36
	12	18
	13	3
	14	52
	15	26
	16	3
	17	10
	18	7
	19	6
	20	10
Part III Choice of Subject Headings in the Card Catalog	21	18
	22	2
	23	12
	24	24
	25	42
	26	12
	27	24
	28	14
	29	20

TABLE III (Continued)

Part	Question	Number of Errors
Part IV Arrangement of Headings in the Card Catalog	30	15
	31	28
	32	30
	33	64
	34	39
Part V Literature Reference Books	35	27
	36	8
	37	47
	38	41
	39	36
	40	46
Part VI Sources of Biographical Information	41	49
	42	45
	43	21
	44	47
	45	48
	46	37
	47	41
Part VII Choices of Indexes	48	15
	49	30
	50	55
	51	31
	52	38
	53	57
	54	64
	55	54
	56	38

TABLE III (Continued)

Part	Question		Number of Errors
Part VIII Interpretation of Information in Periodical Indexes	57		16
	58		27
	59		10
	60		27
	61		7
	62		10
	63		10
	64		5
	65		50
	66		49
	67		17
	68		8
Part IX Abbreviations	69		63
	70		57
	71		63
	72		57
	73		56
	74	(100% error)	77
	75		44
	76		64
	77		75
	78		75
	79		18
	80	(100% error)	77

TABLE IV

MEAN FREQUENCIES OF ERROR AND OF CORRECT RESPONSES FOR THE TEST POPULATION DIVIDED BY EACH OF THE NINE PARTS

Test Part	Error Frequency Range		Mean Frequency of error for the test population	Mean Frequency of errors by percentage	Mean Frequency of correct response by percentage
	Lowest	Highest			
I	0	44	16.10	32.76%	67.24%
II	3	57	20.45	36.11%	63.89%
III	2	42	17.55	33.87%	66.13%
IV	15	64	35.20	47.46%	52.54%
V	8	47	33.16	45.89%	54.11%
VI	21	49	41.14	52.03%	47.97%
VII	15	64	41.77	52.51%	47.49%
VIII	5	50	19.66	35.50%	64.50%
IX	18	77	60.60	67.01%	32.99%

Table III and Table IV. The mean frequency of errors was computed for each part of the test.

The fewest errors were made in Part I. Sixteen and ten hundredths was the mean frequency of errors. The parts of the test with the lowest frequency of errors were Parts I, II, III, and VIII. The mean frequencies of error were 16.10, 20.45, 17.55, and 19.66 respectively.

Part I dealt with vocabulary, Part II dealt with interpretation of the card catalog, Part III dealt with the choice of subject headings in the card catalog and Part VIII dealt with the interpretation of information in the periodical indexes.

The greatest number of errors were made in Part IX. Sixty and sixty hundredths was the mean frequency of error. The parts of the test with the highest frequency of errors were Parts IV, V, VI, VII and IX with mean frequencies of error of 35.20, 33.16, 41.14, 41.77 and 60.60 respectively.

Part IV dealt with the arrangement of headings in the card catalog, Part V dealt with selected literature reference sources, Part VI dealt with selected biographical reference sources, Part VII dealt with choosing periodical indexes for a particular use and Part IX dealt with abbreviations frequently encountered in library research.

The percentage of mean frequency of error and the percentage of mean frequency of correct responses was computed for each part of the test. The percentages are listed in Table IV.

The implications of these findings were as follows. The incoming freshmen had in most cases an understanding of the vocabulary, of the interpretation of the material in the card catalog, of the subject headings used in the card catalog and of the information available in the periodical indexes. The freshmen were noticeably weaker in their understanding of the arrangement of headings in the card catalog, in their ability to select reference sources for research purposes in the literature and biography areas, in their ability to choose periodical indexes for research purposes, and in their ability to respond correctly to the abbreviations used in library research.

By implication the library faculty and the English 101 instructors will need to teach library skills in the above areas of weakness in order for the 1971 incoming freshmen to be able to carry out minimal independent library research. Until these skills are taught to these freshmen, the librarians will not be able to utilize their time providing other reference services. It would seem implicit that in the interest of developing efficient reference service these freshmen should be taught the basic library skills as soon as possible.

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CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The conclusions reached by this researcher as the result of the evidence gathered in this study were that entering freshmen at CWSC in the class of 1971 needed library instruction to provide a level of minimum library competence. They probably would continue to require large amounts of time from reference librarians for the explanation of basic library tools and procedures. Furthermore, they would not be able to carry on independent library research because of a lack of knowledge of the selected library skills.

I. SUMMARY

The observations of the librarians at CWSC over a period of years led them to a consensus that entering freshmen did not possess adequate library skills. It was observed that the freshmen and other students had difficulty in carrying out independent library research and required much individual assistance.

A study was designed to test for a selected group of library skills which were included in a standard test of library skills. Two goals were established for this study. The first was to determine

whether the freshmen possessed library skills at the 50 percentile or above on that test of selected skills. The second was to acquire a list of the skills in which the freshmen needed instruction.

Those skills which needed instruction were use of the arrangement of headings in the card catalog, selection and use of literature and biographical reference sources, and choice of periodical indexes for specific purposes. Also included was a knowledge of the meaning of selected abbreviations frequently used in library research.

The literature indicated that a good, standardized test for the measurement of library competence both in general and for specific skills had not been developed. Work was being carried on to develop such a test instrument. It was concluded that the Feagley test, A Library Orientation Test for College Freshmen, was an adequate measure of general group skills. It would provide data that could be used as a basis for planning library instruction and it was the most up-to-date test currently available.

Before the test population recieved any library instruction at CWSC, the Feagley test was administered to them. The findings were that the tested freshmen possessed the selected library skills at the 47 percentile. The conclusion was that the entering freshmen did not possess enough basic library skills to be able to carry on independent library research.

The list of the skills which needed further instruction was acquired, see page 67. It was given to the faculty and teaching assistants who had the responsibility for library instruction Fall quarter 1971. It was assumed that they used the list in planning appropriate instruction for the 1971 entering freshmen. The test used was not discriminating enough to allow it to be used for diagnostic purposes for either individuals or for specific skills. It was considered adequate for measurement of general group competence in library skills.

A survey of the literature revealed that studies had found instruction in library skills and availability of properly staffed libraries seemed to encourage a measurable improvement in student work-study skills, reading quality and quantity, and library competence. These studies indicated that under those conditions improvement was measurable on all educational levels from elementary through college.

The population from which seventy-seven freshmen were selected for testing consisted of 1,120 freshmen entering CWSC fall quarter 1971. They were all required to take English 101 in which library instruction was offered. They were all graduates of high schools in Washington State in the spring of 1971.

A statistical validity check was performed on the results of the Feagley test and it was determined that those results were significant beyond the chance of a test or sampling error. An item analysis provided specific information about the skills which needed emphasis in the library instructional program for the group.

II. CONCLUSIONS

The following conclusions were reached as a result of this study.

1. The entering freshmen at CWSC in the fall of 1971 did not possess adequate library skills for independent library research.

2. Within the context of the literature, instruction in library skills, techniques and procedures, and the availability of a central library staffed by a trained librarian increased the academic achievement of students at all levels of schooling.

3. Library instruction, within the context of the literature, was most effective when the skills were reviewed regularly for the students.

4. Library instruction can best be planned when accurate data is available regarding the students level of achievement in library skills. A sophisticated program of library instruction can be developed at CWSC with efficient and accurate measurement devices.

5. There is a commonly held group of library skills which were considered basic for independent library research by the profession.

III. RECOMMENDATIONS

The findings of the study and the conclusions reached lead to the following recommendations.

1. Testing of all students enrolled in English 101 should be undertaken by using the test enough to establish norms.

2. The careful establishment of reliability for the Feagley test for the students at CWSC should be undertaken. Some questions may need revision.

3. A study of this population should be undertaken to establish the correlation between library skills and academic achievement as indicated by rank scores of their four years of academic work. Such a study could provide data which would assist in the justification and improvement of library instruction programs at CWSC.

4. Studies similar to this one should be undertaken for sophomore, junior, senior and graduate groups at CWSC. Such studies would provide data for use in making a comprehensive plan for a variety of formal and informal library orientations and instructional programs for the students at CWSC.

5. A post test should be administered to the test group used in this study to determine the effectiveness of the library orientation which they received. Further study of the data would assist librarians in the evaluation of the orientation and instruction given to this group in November and December of 1971.

6. Further research should be undertaken to examine the question raised by Melum in her study. The question of whether test

scores are valid measures of a student's ability to search the literature for a specific purpose was a serious concern during this study. The researcher had serious doubts at time. whether the test scores were representative of a given student's actual ability to do library research. In fact, the researcher questioned whether scores or grades were valid representations in any library instructional situation of the student's actual ability to perform competent library research. Further research in the development of effective and accurate methods for measuring the effect of library instruction is recommended.

7. Further search of the literature should be undertaken to refine the basic list of library skills generated in this study and to place them in a priority of importance.

8. Instruction should be given in the specific skills of using the arrangment of headings in the card catalog, increasing student ability to select reference sources and periodical indexes to meet their specific research needs, and increasing the student's understanding of basic abbreviations used in library research.

9. Further study should be devoted to the analysis of the discrimination value of the 50 percentile chosen as the standard for minimum performance on the Feagley test.

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APPENDIX A

(Appendix A, pages 86-97, is a copy of the copyrighted test by Ethel M. Feagley, A Library Orientation Test for College Freshmen. It is available from Teacher's College Press, Columbia University, 525 West 120th Street, New York, N.Y. 10027)

APPENDIX B

(Appendix B, pages 99-105, is a copy of the Manual for a Library Orientation Test for College Freshmen. It is available from Teacher's College Press, Columbia University, 525 West 120th Street, New York, N.Y. 10027)

APPENDIX C

2

Malcolm D. Alexander
811 E. 4th
Ellensburg, Washington 98926

November 18, 1972

Attention
Mrs. Halprin, Accounting Office
Teachers College Press
Columbia University
525 West 120th Street
New York, N. Y. 10027

Dear Mrs. Halprin:

On October 27, 1971 I obtained permission by telephone to Xerox copies of Feagley/Curtiss/Gaver/Greene. A Library Orientation test for College Freshmen from a specimen set 8077-5103 which I had purchased. You told me to send the payment for the copies I made to you in order to insure that no further copies of the test would be sent to me when this payment arrived in your office.

The enclosed check is payment for my use of the test. I made 35 copies of the test booklet and 125 copies of the answer sheet.

The Price is listed in the manuel as

$4.50 for 35 tests and 35 answer sheets
1.25 for each 35 additional answer sheets
1.25-35 answer sheets
1.25-35 answer sheets
$8.25 for 1 original set of test and answer sheets (35) and for 105 additional answer sheets

This is a payment due to you. Do not send any material to me I already have it.

Thank you very much for helping me last fall.

Sincerely,
William D. Alexander
Malcolm D. Alexander
811 E. 4th, Ellensburg, Washington 98926

signed and sworn before me this 15th day of November, 1972 Jeanne K. Dahne
Notary Public, Ellensburg, Wn.